

ABSTRACT OF THE DISCLOSURE

Combustion gas channels through which combustion gas (A) flowing in from a combustion gas inlet (17) passes are formed in first and second heat exchanger bodies (23) and (19) so as to be directed toward a combustion gas outlet (21) respectively. Liquid fuel (B) in which methanol and water have been mixed is supplied into a gap (51) between a distribution plate (47) and an upper plate (49) through fuel supply holes (57). The liquid fuel (B) is distributed and supplied to the whole of the first heat exchanger body (23) through a large number of holes in the distribution plate (47). In the first and second heat exchanger bodies (23) and (19), fuel channels (23a) and (19a) through which the liquid fuel (B) passes are formed so as to be directed vertically and separated from the combustion gas channels by partition plates, respectively. The liquid fuel (B) passing through the fuel channels (23a) and (19a) carries out heat exchange with the combustion gas. Thus, the liquid fuel (B) is vaporized. Chamfers are formed in the lower surfaces of the large number of holes of the distribution plate (47) so that the liquid fuel (B) flowing down through the holes is collected in the chamfer portions, and falls down in the form of drops. Thus, flows of the liquid fuel flowing out from adjacent ones of the holes are prevented from joining each other.

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